

## What is Claimed:

- 1                   1.       An intensified solid-state imaging sensor comprising:  
2                   a photo cathode for converting light from an image into electrons;  
3                   an electron multiplying device for receiving electrons from the photo  
4 cathode, the electron multiplying device outputting a greater number of electrons  
5 than the electron multiplying device receives from the photo cathode; and  
6                   a solid-state image sensor including a plurality of pixels for receiving  
7 the electrons from the electron multiplying device through a plurality of channels of  
8 the electron multiplying device, the solid-state image sensor generating an  
9 intensified image signal from the electrons received from the electron multiplying  
10 device,  
11                  the plurality of channels being arranged in a plurality of channel  
12 patterns, and the plurality of pixels being arranged in a plurality of pixel patterns,  
13 each of the plurality of channel patterns being mapped to a respective one of the  
14 plurality of pixel patterns such that electron signals from each of the plurality of  
15 channel patterns is substantially received by the single respective one of the plurality  
16 of pixel patterns.
- 1                   2.       The intensified solid-state imaging sensor of claim 1 wherein  
2 each of the plurality of channel patterns comprises a single channel, and each of the  
3 plurality of pixel patterns comprises a single pixel.
- 1                   3.       The intensified solid-state imaging sensor of claim 2 wherein  
2 each of the plurality of channel patterns is substantially the same size and shape as  
3 the respective one of the plurality of pixel patterns.
- 1                   4.       The intensified solid-state imaging sensor of claim 1 wherein  
2 each of the plurality of channel patterns comprises a plurality of channels, and each  
3 of the plurality of pixel patterns comprises a single pixel.

1                   5.       The intensified solid-state imaging sensor of claim 1 wherein  
2 each of the plurality of channel patterns comprises a single channel, and each of the  
3 plurality of pixel patterns comprises a plurality of pixels.

1                   6.       The intensified solid-state imaging sensor of claim 1 wherein  
2 each of the plurality of channel patterns comprises a plurality of channels, and each  
3 of the plurality of pixel patterns comprises a plurality of pixels.

1                   7.       The intensified solid-state imaging sensor of claim 1 wherein  
2 each of the plurality of channel patterns is rotationally and translationally aligned  
3 with the respective one of the plurality of pixel patterns.

1                   8.       The intensified solid-state imaging sensor of claim 1 wherein  
2 the electron multiplying device comprises a multi-channel plate, and the plurality of  
3 channels comprises a plurality of pores of the multi-channel plate.

1                   9.       The intensified solid-state imaging sensor of claim 1 wherein  
2 the solid-state image sensor is CCD device.

1                   10.      The intensified solid-state imaging sensor of claim 1 wherein  
2 the solid-state image sensor is a CMOS device.